

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**Patent Application**

Inventor M. L. Obradovich

Case 9800.1019

Serial No. Examiner TBA

Filing Date Group Art Unit

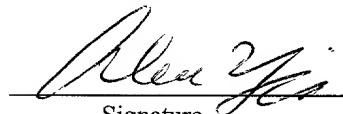
Title Centralized Control and Management System for Automobiles

**PRELIMINARY AMENDMENT  
AND INFORMATION DISCLOSURE STATEMENT**

I hereby certify that this paper is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on April 19, 2001.

Alex L. Yip

Attorney Name



Signature

34,759

Registration No.

April 19, 2001

Date of Signature

**THE COMMISSIONER OF PATENTS AND TRADEMARKS  
WASHINGTON, D.C. 20231**

Sir:

Applicant submits herewith an Information Disclosure Statement in the above-identified patent application. In addition, applicant hereby preliminarily amends the application before its examination on the merits as follows:

**IN THE SPECIFICATION**

After the title on page 1, insert the following paragraph:

This application is a continuation of application Serial No. 08/904,855, filed on

August 1, 1997.

**Replace** the paragraph beginning on page 1, line 4 with the following paragraph:

The present application is related to commonly assigned U.S. Patent No. 6,009,355.

**Replace** the paragraph beginning on page 13, line 21 with the following paragraph:

In addition to directing the user to a given destination, system 329 through processor 103 cooperates with weather system 332 and traffic system 336 to be described. In accordance with an aspect of the invention, systems 332 and 336 jointly provide on display 205 updates regarding traffic congestions, weather conditions, hazards, highway warnings along the route suggested by system 329.

**Replace** the paragraph beginning on page 20, line 21 with the following paragraph:

At this point, the user may touch the screen of display 205 to define a parking space into which the vehicle is to be parked. In order to carry out parallel parking effectively, this parking space needs to be reasonably suitable for the vehicle to be maneuvered into. Processor 103 at step 547 computes the coordinates defining the selected parking space. Knowing the respective coordinates of the subject vehicle, the surrounding objects and the parking space, processor 103 at step 551 determines the instants at which and extents to which the vehicle is to be accelerated and decelerated in the course of the parking, and at step 553 the instants at which and extents to which the steering wheel is to be turned and returned. At step 555, processor 103 causes a computer simulation to be performed using the speed and steering parameters just determined to verify that the automatic parking is feasible, without running into any surrounding objects. At that point, the user may depress ANIMATION key 219j to view on display

205 the simulation in which the subject vehicle moves into the user defined parking space in an animated fashion. At step 559 processor 103 determines whether the vehicle can be properly parked under the above conditions. If processor 103 determines that the automatic parking is unrealizable, processor 103 informs the user of same, as indicated at step 563. In response, the user needs to select another parking space or may attempt to park the vehicle manually.

**Replace** the paragraph beginning on page 31, line 11 with the following paragraph:

In addition, a SMART WINDOWS function on sub-screen 840 may be selected by touching ON option 842 on the screen or pointing and clicking at same. With the SMART WINDOWS function selected, for example, subsystem 139 causes the windows to be completely closed upon a shut-off of the engine or an activation of air conditioning. When coupled with a SMART CLIMATE function to be described, the SMART WINDOWS function includes slightly opening selected windows to vent out excess heat prior to the user's arrival, thereby pre-conditioning the vehicle. In addition, when an AUTO function on sub-screen 840 is selected, the user can specify the vehicle speed at which the driver side front window is made completely open or closed. By touching on the screen, or pointing and clicking at blank 845 or blank 850, choices of speed are listed beneath the blank. For example, by selecting a zero speed for blank 845 ahead of a toll plaza, the window in question would be completely opened when the vehicle stops at a toll booth, thereby conveniently allowing the user to pay tolls.

**IN THE CLAIMS**

**Cancel** claims 1-20.

**Add** claims 21-58 as follows:

- 1        21. A system for use in a vehicle comprising:
  - 2            an interface for providing a set of indicators for indicating a group of information
  - 3          sources outside the vehicle, the group of information sources being associated with a
  - 4          location, each indicator being selectable to receive signals from the information source
  - 5          indicated by the indicator; and
  - 6            a processor for determining whether the vehicle is within a predetermined
  - 7          distance from a second location, a second set of indicators indicating a second group of
  - 8          information sources, which is associated with the second location, being provided when it
  - 9          is determined that the vehicle is within the predetermined distance from the second
  - 10         location.
- 1        22. The system of claim 21 wherein at least one of the information sources
- 2        includes a radio station.
- 1        23. The system of claim 21 wherein at least one of the information sources
- 2        includes a television station.
- 1        24. The system of claim 21 wherein at least one of the indicators is selectable by
- 2        voice command.
- 1        25. The system of claim 21 wherein the interface includes a display.
- 1        26. The system of claim 25 wherein at least one of the indicators when selected is
- 2        highlighted on the display.

3        27. The system of claim 21 wherein the processor determines whether the vehicle  
4    is within the predetermined distance from the second location by comparing a global  
5    positioning system (GPS) measurement identifying a current location of the vehicle with  
6    a second GPS measurement identifying the second location.

1        28. The system of claim 21 wherein at least one of the indicators includes an  
2    icon.

1        29. The system of claim 28 wherein the at least one indicator is selectable by  
2    pointing and clicking at the icon.

1        30. A system for use in a vehicle comprising:  
2            a first device for selecting information sources outside the vehicle;  
3            a memory for storing data concerning the selected information sources, the data  
4    being stored according to a location determined by a second device in the vehicle; and  
5            an interface for providing indicators indicating the selected information sources  
6    based on the stored data when the vehicle is within a predetermined distance from the  
7    location, each indicator being selectable to receive signals from the information source  
8    indicated by the indicator.

1        31. The system of claim 30 wherein the first device includes a frequency scanner  
2    for identifying the information sources.

1        32. The system of claim 30 wherein at least one of the information sources  
2    includes a radio station.

1        33. The system of claim 30 wherein at least one of the information sources  
2 includes a television station.

1        34. The system of claim 30 wherein at least one of the indicators is selectable by  
2 voice command.

1        35. The system of claim 30 wherein the interface includes a display.

1        36. The system of claim 30 wherein at least one of the indicators when selected is  
2 highlighted on the display.

1        37. The system of claim 30 further comprising a processor for determining  
2 whether the vehicle is within the predetermined distance from the location.

1        38. The system of claim 30 wherein the second device determines the location  
2 based on a GPS measurement.

1        39. The system of claim 30 wherein at least one of the indicators includes an  
2 icon.

1        40. The system of claim 39 wherein the at least one indicator is selectable by  
2 pointing and clicking at the icon.

1        41. A method for use in a system in a vehicle comprising:  
2            providing a set of indicators for indicating a group of information sources outside  
3            the vehicle, the group of information sources being associated with a location, each

4 indicator being selectable to receive signals from the information source indicated by the  
5 indicator;

6 determining whether the vehicle is within a predetermined distance from a second  
7 location; and

8 providing a second set of indicators indicating a second group of information  
9 sources which is associated with the second location when it is determined that the  
10 vehicle is within the predetermined distance from the second location.

1 42. The method of claim 41 wherein at least one of the information sources  
2 includes a radio station.

1 43. The method of claim 41 wherein at least one of the information sources  
2 includes a television station.

1 44. The method of claim 41 wherein at least one of the indicators is selectable by  
2 voice command.

1 45. The method of claim 41 wherein at least one of the indicators is provided on a  
2 display in the system and the at least one indicator when selected is highlighted on the  
3 display.

1 46. The method of claim 41 wherein a GPS measurement identifying a current  
2 location of the vehicle is compared with a second GPS measurement identifying the  
3 second location in determining whether the vehicle is within the predetermined distance  
4 from the second location.

1        47. The method of claim 41 wherein at least one of the indicators includes an  
2    icon.

1        48. The method of claim 47 wherein the at least one indicator is selectable by  
2    pointing and clicking at the icon.

1        49. A method for use in a system in a vehicle, the system including a device, the  
2    method comprising:

3            selecting information sources located outside the vehicle;  
4            storing data concerning the selected information sources, the data being stored  
5    according to a location determined by the device; and  
6            providing indicators indicating the selected information sources based on the  
7    stored data when the vehicle is within a predetermined distance from the location, each  
8    indicator being selectable to receive signals from the information source indicated by the  
9    indicator.

1        50. The method of claim 49 wherein the data is about frequencies of the selected  
2    information sources.

1        51. The method of claim 49 wherein at least one of the information sources  
2    includes a radio station.

1        52. The method of claim 49 wherein at least one of the information sources  
2    includes a television station.

1        53. The method of claim 49 wherein at least one of the indicators is selectable by

2 voice command.

1        54. The method of claim 49 wherein at least one of the indicators is provided on a  
2 display in the system and the at least one indicator when selected is highlighted on the  
3 display.

1        55. The method of claim 49 further comprising determining whether the vehicle  
2 is within the predetermined distance from the location.

1        56. The method of claim 49 wherein the location is determined based on a GPS  
2 measurement.

1        57. The method of claim 49 wherein at least one of the indicators includes an  
2 icon.

1        58. The method of claim 57 wherein the at least one indicator is selectable by  
2 pointing and clicking at the icon.

### Remarks

The present application is a continuation of application Serial No. 08/904,855, filed on August 1, 1997. The specification has been amended to reflect such a priority claim. It has also been amended to correct typographical errors. Marked-up copies of pages 1, 13, 20 and 31 of the specification reflecting the amendments are enclosed. In addition, Figs. 14, 16 and 18 have been amended to correct typographical errors. Accordingly, marked-up copies of these figures with corrections in red are enclosed, along with a Letter to the Official Draftsperson.

Applicant has cancelled claims 1-20. Claims 21-58 have been added which are drawn to various aspects of the invention. It is respectfully submitted that the claims, as added, are patentable over the cited art in the parent application including U.S. Patent No. 6,006,161 issued to Katou.

In addition, applicant brings to the Examiner's attention the references listed on the attached Form PTO-1449 (12 pages). Pursuant to 37 C.F.R. 1.98(d), copies of these references are not enclosed as they were previously cited by or transmitted to the U.S. Patent and Trademark Office in the parent application identified above. It is respectfully requested that the listed references be made of record in the present application.

Respectfully,

Michael L. Obradovich

By   
Alex L. Yip, Attorney  
Reg. No. 34,759  
212-836-7363

Date: April 19, 2001  
Enclosures

**CENTRALIZED CONTROL AND****MANAGEMENT SYSTEM FOR AUTOMOBILES**

This application is a continuation of application Serial No. 08/904,855 filed on August 1, 1997.

**Statement of Related Applications**

The present application is related to copending, 5 commonly assigned U.S. Patent Application Serial No. 6,009,355 08/789,934, entitled "Multimedia Information and Control System for Automobiles."

**Field of the Invention**

The invention relates generally to control and 10 management systems and, more particularly, to a system for use in an automobile which facilitates the user's control and management of various vehicle functions.

**Background of the Invention**

The concept of an automated highway system (AHS) 15 has been fervently pursued. Although the interpretation of the AHS concept varies from one person to another, people implementing the concept are incorporating more and more technology into an automobile to improve its operations, better its safety measures, and add conveniences to the 20 vehicle user.

A prevalent interpretation of the AHS concept is hands-free driving. To that end, magnets have been buried along an experimental automated highway, and automobiles have been equipped with magnetometers to sense the magnets 25 to guide the moving vehicles, thereby obviating manual steering. In another approach, an automobile is equipped with a video system in which cameras monitor different segments of the road ahead and feed images to on-board computers that control steering, acceleration and braking of 30 the vehicle.

detected by processor 103, the user is elicited for information concerning the destination, any intermediate stops, etc. Such elicitation is realized by posing questions on display 205 and/or by uttering those questions 5 using a synthesized voice through an audio output. The user then provides verbal responses thereto through an audio input. Relying on standard speech recognition circuitry in system 100, navigation system 329 recognizes and registers the responses. Using stored map information, system 329 10 then provides on display 205 a suggested route leading to the destination. Furthermore, based on the knowledge of the vehicle's instantaneous speeds and directions, system 329 is capable of verbally and visually directing the user to the destination.

15 Because of the limited capacity of the storage for the map information or because the map information needs to be updated from time to time, it will be appreciated that system 329 would instead obtain the necessary, latest map information from an on-line service through a cellular or 20 wireless connection.

In addition to directing the user to a given destination, system 329 through processor 103 cooperates with weather system 332 and traffic system 336 to be described. In accordance with an aspect of the invention, 25 systems 332 and 336 jointly <sup>provide</sup> ~~provide~~ on display 205 updates regarding traffic <sup>Congestions</sup> ~~congestion~~, weather conditions, hazards, highway warnings along the route suggested by system 329.

Fig. 6 illustrates one such navigation screen on display 205. On this screen, indicator 450 marks the 30 current position of the vehicle. The suggested route (shown in boldface) by navigation system 329 is numerically denoted 453. Traffic indicator 455 is provided by system 336 to

complete stop, automatic parking routine 500 stored in memory 107 is invoked. When instructed by this routine, which is depicted in Fig. 9, processor 103 causes display 205 to show thereon the positions of the surrounding objects  
5 relative to the subject vehicle, as indicated at step 543.

At this point, the user may touch the screen of display 205 to define a parking space into which the vehicle is to be parked. In order to carry out parallel parking effectively, this parking space needs to be reasonably  
10 suitable for the vehicle to be maneuvered into. Processor 103 at step 547 computes the coordinates defining the selected parking space. Knowing the respective coordinates of the subject vehicle, the surrounding objects and the parking space, processor 103 at step 551 determines the  
15 instants at which and extents to which the vehicle is to be accelerated and decelerated in the <sup>course</sup> ~~cause~~ of the parking, and at step 553 the instants at which and extents to which the steering wheel is to be turned and returned. At step 555, processor 103 causes a computer simulation to be performed  
20 using the speed and steering parameters just determined to verify that the automatic parking is feasible, without running into any surrounding objects. At that point, the user may depress ANIMATION key 219j to view on display 205 the simulation in which the subject vehicle moves into the  
25 user defined parking space in an animated fashion. At step 559 processor 103 determines whether the vehicle can be properly parked under the above conditions. If processor 103 determines that the automatic parking is unrealizable, processor 103 informs the user of same, as indicated at step  
30 563. In response, the user needs to select another parking space or may attempt to park the vehicle manually.

Otherwise if processor 103 determines that the

window, respectively. Indicators 821, 823, 825 and 827 on the hypotenuses of the respective triangles indicate the extents to which the corresponding windows are open. The user may touch the indicator on the screen to raise (or lower) it along the hypotenuse. In response, processor 103 causes access control subsystem 139 to close (or open) the window accordingly. Alternatively, the user may operate indicator device 227 or 229 to point at one of the indicators and drag same along the hypotenuse to control the corresponding window opening.

In addition, a SMART WINDOWS function on sub-screen 840 may be selected by touching ON option 842 on the screen or pointing and clicking at same. With the SMART WINDOWS function selected, for example, subsystem 139 causes the windows to be ~~completely~~<sup>Completely</sup> closed upon a shut-off of the engine or an activation of air conditioning. When coupled with a SMART CLIMATE function to be described, the SMART WINDOWS function includes slightly opening selected windows to vent out excess heat prior to the user's arrival, thereby pre-conditioning the vehicle. In addition, when an AUTO function on sub-screen 840 is selected, the user can specify the vehicle speed at which the driver side front window is made completely open or closed. By touching on the screen, or pointing and clicking at blank 845 or blank 850, choices of speed are listed beneath the blank. For example, by selecting a zero speed for blank 845 ahead of a toll plaza, the window in question would be completely opened when the vehicle stops at a toll booth, thereby conveniently allowing the user to pay tolls.

The screen of Fig. 13 may also be invoked by depressing DOORS key 232b. Flaps 851, 853, 855 and 857 in Fig. 13 correspond to the driver side front door, driver

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**Patent Application**

Inventor M. L. Obradovich

Case 9800.1019

Serial No. Examiner TBA

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Title Centralized Control and Management System for  
Automobiles

**L E T T E R**

THE COMMISSIONER OF PATENTS AND TRADEMARKS  
WASHINGTON, D.C. 20231

**Attention: Official Draftsperson**

Sir:

Enclosed are marked-up copies of Figs. 14, 16 and 18, with the corrections indicated in red, in the above-identified patent application.

Respectfully,

Michael L. Obradovich

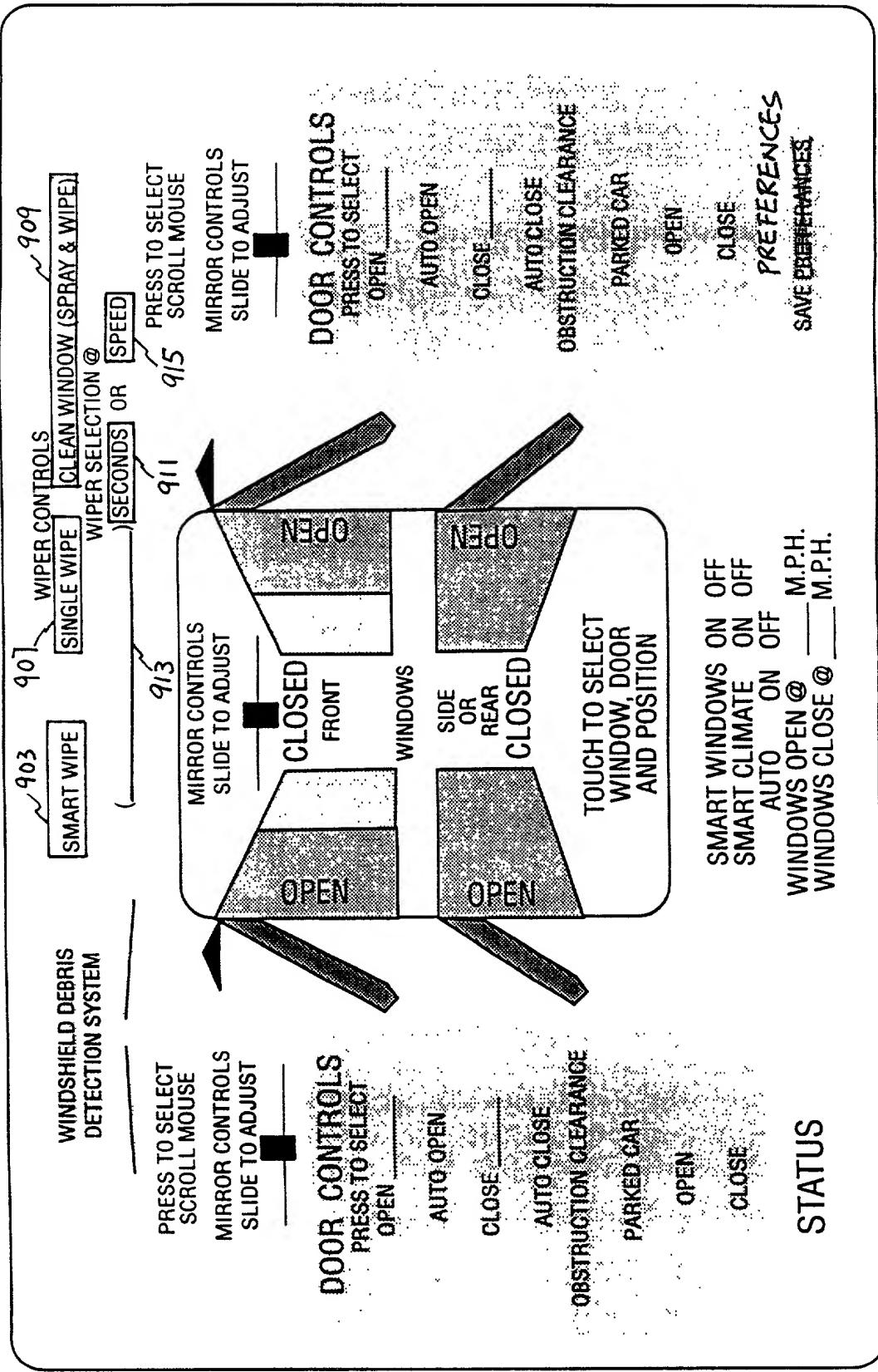
By

  
Alex L. Yip, Attorney  
Reg. No. 34,759  
(212) 836-7363

Date: April 19, 2001  
Enclosure

Fig. 14

M. L. OBRADOVICH 2



Z. L. OBRADOVIC - 2

SHIFT



Fig. 16

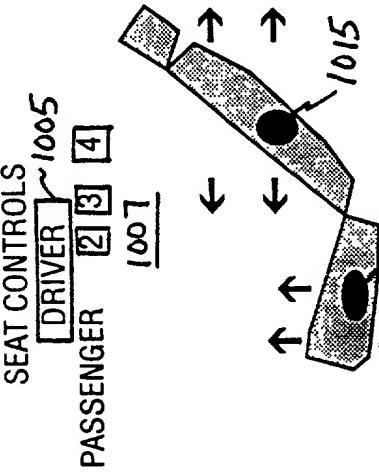
VISUAL

VOICE

QUICK TIPS

MOVE MOUSE OR  
PRESS TO SELECT

SEAT CONTROLS  
[DRIVER] 1005  
[PASSENGER] 1007



SLIDE OR TOUCH TO ADJUST  
ARM REST ADJUSTMENTS  
SEAT HEATER ON OFF  
SMART SEATS  
CUSHION ADJUSTMENT  
BACK SUPPORT ADJUSTMENT  
AUTO TEMPERATURE CONTROL  
MESSAGE ON OFF

RESTORE SETTINGS

WARNING MESSAGES

DRIVER PASSENGER 1 2 3 4

SMART CLIMATE  
AUTO CLIMATE  
SET CLIMATE

CLIMATE CONTROL SYSTEM  
1021 FRONT VENTS

FRONT  
1 SEATS  
FRONT VENTS

1025  
REAR VENTS

REAR  
3 SEATS  
FRONT VENTS

1029  
REAR VENTS

FAN CONTROLS  
VENT CONTROLS  
MANUAL AIR VOLUME

WINDSHIELD DEFROST  
REAR DEFROST  
MIRROR DEFROST  
SMART ALL AUTO DEFROST

TEMPERATURE SET

AIR RECYCLATION

ACTIVE FILTER SYSTEM

CONTAMINATION ALERT

MORE INFORMATION

PREFERENCES

SAVE PREFERENCES

Fig. 18

SELECTIONS FROM  
MENU OR SCREEN

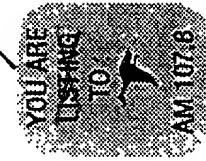
QUICK TIP: PRESS  
ANIMATION TO HEAR AND  
SEE DEMO

ANIMATION VOICE  
MORE INFORMATION USER ICON

## AUDIO SYSTEM RADIO CASSETTE CD VIDEO TV WEATHER BAND

RADIO STATIONS: XX LOS ANGELES, XX SANTA ANA STATIONS  
X IRVINE  
SAVE AREA SETTINGS YES NO

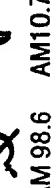
1271



1273



1275



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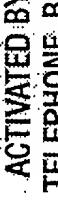
1278



1279



1280



1281



1282



1283



SELECTION BEING PLAYED:  
XX SONG, XX ALBUM

1245

SET FOR DRIVER  
YOU ARE LISTENING

ON OFF VOLUME CONTROL

FADER CONTROLS FRONT BACK

LEFT RIGHT LEFT RIGHT

BASS TREBLE

MOVE SPEAKERS FOR  
DESIRED SOUND

EFFECTS  
PRESS EFFECT THEN

SPEAKER  
ROCK

SURROUND  
MOVIE  
ETC.

SMART AUDIO

DOLBY AUTO RADIO

DIGITAL  
ENCODER

MORE INFORMATION

PREFERENCES

SAVE PREFERENCES

QUICK TIP: ANTENNA IS  
ACTIVATED BY RADIO AND  
TELEPHONE, BOTH MUST BE  
SWITCHED OFF TO LOWER  
ANTENNA

QUICK TIP: SCROLL FOR  
MORE STATIONS  
USE MOUSE CONTROLS  
OR PRESS TO SELECT



1207

1205

M. L. OBRADOVICH 2